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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,008	02/12/2002	Masayuki Hariya	389.41181X00	5084

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EXAMINER

OSBORNE, LUKE R

ART UNIT	PAPER NUMBER
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2123

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/073,008

Applicant(s)

HARIYA ET AL.

Examiner

Luke Osborne

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/12/2002.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Status

1. Claims 1-16 are pending in the instant application.
Claims 1-16 stand rejected.

Foreign Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement (IDS) submission on 2/12/2002 is in compliance with the provisions of 37 CFR 1.97. However a translation of reference AM was not provided and thus not considered by Examiner.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 3, 5, 6, 8-11 and 13-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "optimum" in the claims listed above is a relative term which renders the claim indefinite. The term "optimum" is not defined by the claim, the specification

Art Unit: 2123

does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. While it is reasonable as provided by the claim language that the optimum is defined by the value from the calculation, it is not explicit nor is the "calculating an evaluation value" definite.

Any claim not directly rejected on 35 U.S.C 112, 2nd stands rejected due to its dependency.

The art rejections of the claim(s) listed above are applied as best understood in light of the rejection under 112, 2nd paragraph discussed above.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-6 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claim 1 as exemplary of independent claims 1, 2, 4 and 5. For a claimed invention to be statutory, the claimed invention must be within the technological art. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or advance the technological art fail to promote the "progress of science and the useful arts" (i.e., the physical sciences as opposed to social sciences, for example) and therefore are found to be non-statutory subject

Art Unit: 2123

matter. For a method claim to pass muster, the recited process must somehow apply, involve, use, or advance the technological arts.

As to technological arts recited in the preamble, mere recitation in the preamble (i.e., intended or field of use) or mere implication of employing a machine or article of manufacture to perform some of the recited steps does not confer statutory subject matter to an otherwise abstract idea unless there is positive recitation in the claim as a whole to breathe life and meaning into the preamble. In *Bowman* (Ex parte *Bowman*, 61 USPQ2d 1665, 1671 (BD. Pat. App. & Inter. 2001) (Unpublished), the board affirmed the rejection under U.S.C. 101 as being directed to non-statutory subject matter. Although *Bowman* discloses transforming physical media into a chart and physically plotting a point on said chart, the Board held that the claimed invention is nothing more than an abstract idea, which is not tied to any technological art or environment.

In the present case, although claim 1 recites at the preamble an analytical model preparing method, the steps in the claim body of entering, collating and mapping shape models, can be implemented by the mind of a person or by the use of a pencil and paper. In other words, since the claimed invention, as a whole, is not within the technological arts as explained above, these claims only constitute an idea and does not apply, involve, use, or advance the technological arts, thus, it is deemed to be directed to non-statutory subject matter.

Examiner suggests the addition of —computerized—or —computer implemented—in front of method to limit the subject matter to statutory grounds.

Art Unit: 2123

5. Claims 2, 3, 5, 6, 8-11 and 13-16 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 2 as exemplary of the claims listed above is directed to non-statutory subject matter for failing to be concrete. The claim recites a calculation of an evaluation value. The specification does not provide how this calculation is performed and therefore presumed to be arbitrary. Arbitrary calculations provide non-repeatable results and thus lack concreteness forming a non-statutory claim.

Any claim not directly rejected on 35 U.S.C 101 stands rejected due to its dependency.

To expedite a complete examination of the instant application, the claims rejected under 35 U.S.C 101(nonstatutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 7 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pre Grant Publication No. 2002/0107673 to Haller et al, hereinafter "Haller".

Regarding claim 1, Haller discloses an analytical model preparing method. See Figures 2, 4, 6, 7 and the corresponding portions of Haller's specification for this disclosure. In particular, Haller discloses "An analytical model preparing method comprising the steps of:

entering a shape model to be analyzed [The computer-aided design software allows the user to create and modify a 3D model and implements aspects of the invention described herein (Paragraph 37)];

collating said shape model to be analyzed with at least one already prepared shape model stored in a memory unit

[The modeling system then builds a descriptor from the design intent data (step 604), and associates the descriptor as an attribute in the feature's data structure (step 606). Descriptors may be associated with a feature in a number of ways, e.g., including descriptor data directly in a feature's data structure, by using pointers or links between the descriptor data and the data structure, or by using database keys or other information to associate the descriptor and feature data (Paragraph 49)]; and

mapping the shape model to be analyzed with said already prepared shape model in accordance with the result of said collation, thereby preparing at least one analytical model corresponding to said shape model to be analyzed by use of preparing information of the analytical model registered in said memory unit

[The automated connection mechanism is driven by descriptors. A descriptor is stored in a feature's data structure when the design engineer creates the feature. The descriptor is later used to find and retrieve a standard part, for which the feature was designed, from a part library. To find and retrieve a standard part, the descriptor associated with the feature is used to automatically construct a database query that identifies a set of records in the part library. Thus, parts are selected from the parts library by matching (in whole or in part) attributes derived from a feature's descriptor with attributes of pre-defined standard parts models (Paragraph 44)].

Claims 4, 7 and 12 refer to the same limitations as claim 1, thus are rejected for the same reasons as claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 2, 3, 5, 6, 8-11 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haller in view of What can go wrong with FEA? by, Klaus-Jürgen Bathe, hereinafter "Bathe".

Regarding claim 2, Haller teaches an analytical model preparing method. See Figures 2, 4, 6, 7 and the corresponding portions of Haller's specification for this teaching. In particular, Haller teaches "An analytical model preparing method comprising the steps of:

[entering a shape model to be analyzed;

collating said shape model to be analyzed with at least one already prepared shape model stored in a memory unit;

mapping the shape model to be analyzed with said already prepared shape model in accordance with the result of said collation, thereby preparing at least one analytical model corresponding to said shape model to be analyzed by use of preparing information of the analytical model registered in said memory unit;] These limitations are identical to limitations as rejected for claim 1 thus are rejected for the same reasons.

Haller also teaches calculating an evaluation value of the descriptors and attributes of at least one prepared analytical model, and displaying said value to select an optimum analytical model [Figure 6, 606, 608 (Figure 7), 610,].

Haller does not expressly teach the limitation that the attribute or descriptor for the parts is a mesh quality of the analytical model.

Bathe teaches that the quality of a mesh can be calculated and is an attribute of the mesh as described by the figure on page 1.

It would have been obvious to a person of ordinary skill in the art at the time of Applicants' invention to know the quality of the mesh as taught by Bathe and use it as an attribute in the method of Haller.

The motivation to do so would have been, in order to make sure the solution gained from the mesh size has an acceptable error as taught by Bathe pages 1-5.

Regarding claim 3, the combination as provided for claim 2, teaches the method of claim 2. The combination further teaches an analytical model preparing method comprising the steps of:

- entering analytical model information showing information for analytical calculation [Bathe: element size]; and

- changing the manner of calculation of an evaluation value of mesh quality in accordance with the analytical model information [Bathe: Figure on page 1, the model mesh calculation is to be updated to get accurate results from the entered information].

Claims 5 and 6 refer to similar limitations as claims 2 and 3(respectively) thus are rejected for the same reasons.

Claims 8-11, 13-16 contain the same limitations as claims 1-3, thus are rejected for the same reasons as claims 1-3.


Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO form 892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luke Osborne whose telephone number is (571) 272-4027. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P. Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Paul L. Rodriguez

Primary Examiner
Art Unit 2125

9/30/05

LRO